



ENVIRONMENT, HEALTH & SAFETY DIVISION
Safety Engineering Group
Mail Stop 90K

INTEGRATED FUNCTIONAL APPRAISAL (IFA)

Directorate's Organizational Units

August 10, 2001

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Executive Summary

The Environment, Health and Safety Division (EH&S) conducted an Integrated Functional Appraisal (IFA) of the Directorate Organizational Units (Directorate) during July and August, 2001. The Appraisal process involved safety walkthrough of spaces occupied by the Directorate's organizational units (primarily through ongoing participation in self-assessment inspections), review of Supervisor Accident Analysis Reports (SAARs) and trends, and discussions with managers and employees. Participants in the IFA included technical specialists from the EH&S (Electrical Safety Engineer, Industrial Hygienist, Healthcare Professional/RN, and Ergonomist), Department of Energy Berkeley Site Office (DOE-BSO) observer, Directorate/Ops Safety (ESH) Coordinator, Office of Assessment and Assurance (OAA) observer, and the responsible host division's ESH Coordinator, ASD Line Manager, ASD Safety Representative and HR Center manager.

The IFA helped to validate that ES&H hazards are effectively being identified and controlled within the Directorate. Continuous improvement safety initiatives were undertaken, self-assessment performance consistently met expectations, and hazards reasonably managed. Opportunities for strengthening worker safety were also identified. Overall, commitment to and management of safety across the Directorate's organizational units continues to be very effective:

- ❑ Top management commitment is visible and communicated
- ❑ Constructive progress is being made to integrate safety into work activities in a comprehensive manner
- ❑ Annual Self-Assessment program has been consistently meeting virtually all performance expectations
- ❑ Resources have been committed to support the ESH function by hiring a full-time safety coordinator, as well as equipping offices with ergonomic furniture and accessories
- ❑ ISM Plan is reviewed annually by management, and an effort was undertaken that resulted in the development of a tailored ASD safety plan (largest unit in the Directorate)
- ❑ Triennial (Directorate/Ops) to biennial (ASD) cycle has been established for completing ergonomic evaluations for all employees
- ❑ Customized training initiatives were developed (ASD Tutorials) to enhance office safety and ergonomics awareness.
- ❑ Although there has been an uptick in the frequency of recordable employee injuries and illnesses, there have not been any cases resulting in lost time or restricted/modified work

Opportunities for Continuous Improvement

- ❑ Manager and supervisor training in ergonomics awareness and EH&S essentials (SAAR investigations, Office Safety, ISM Roles and Responsibilities, etc.) would help strengthen understanding and implementation of safety.

- ❑ Launching a pilot “Office Behavior-based Accident Prevention (OBAP) program and wellness initiatives would position its safety in a prevention mode. Such proactive efforts would help reinforce consistent safe work practices, especially office ergonomics, and improve the quality of work life.
- ❑ Electronic recording and tracking of hazard data via Laboratory Corrective Action Tracking System (LCATS) and Hazard, Equipment, Authorization and Review (HEAR) databases would help to maintain a current inventory of hazards and efficacy in management of hazard mitigation.

Technical Report

1.0 Introduction: IFA Scope and Objectives

The Integrated Functional Appraisal (IFA) is a key component of Berkeley Lab's Integrated Safety Management (ISM) system. It is part of Core Function #5 (Continuous Improvement) of the ISM concept and forms one of the three tiers of the Laboratory's Self-Assessment Program. The role of the IFA is to provide a technical "occupational safety and health" review of the Directorate to assure workplace safety programs are providing adequate protection, as well as identify opportunities for continuous improvement. The objective of each triennial IFA is to evaluate the ongoing effectiveness of Divisions' Integrated Safety Management Programs. The EH&S Division is charged with the responsibility to coordinate and perform the IFA. The last IFA conducted for the Directorate's Organizational Units occurred in 1998.

2.0 IFA Process and Procedures

Guidance for this round of IFAs involved directing the appraisals toward work conducted under or in association with Formal Work and/or Facility Authorizations (e.g., AHDs, RWAs, RWPs, SSAs, SWAAs, PHAs, SADs/FSADs, Discharge permits (sewer, air, etc.), and NEPA/CEQA documents). Since the Directorate's organizational units do not operate under this formal authorization system, a risk-based approach was utilized to identify candidate office areas for appraisal. Selection of venues for the IFA relied upon the review of the following documentation and data:

- ❑ Scope of work performed by the various organizational units under the Directorate:
 - Laboratory Directorate
 - Operations Office
 - Administrative Services Department (ASD)
 - Office of Planning and Communications (including Public Information and Center for Science and Engineering Education [CSEE], and Planning and Analysis Office)
 - Laboratory Counsel (including Patent Department)
 - Internal Audit Services and Assessment
 - Government and Community Relations Office
 - Financial Services Department
 - Human Resources Department
 - Workforce Diversity Office
- ❑ Supervisor Accident Analysis Reports of injuries and illnesses sustained by employees working in the Directorate's Organizational Units
- ❑ Self Assessment Report findings
- ❑ 1998 IFA Report
- ❑ Hazard information from the Integrated Hazards Assessment (IHA) database (superceded by the Hazard, Equipment, Authorization and Review [HEAR] database system)

□ Ergonomic Evaluation Reports

Spaces directly assigned to, and occupied by, the Directorate's various organizational units are routinely inspected as part of the Self-Assessment Program. These management walk-arounds routinely include the EH&S Division Liaison and satisfies the IFA field appraisals needs.

The respective host division's safety coordinator and self-assessment program independently handle ES&H issues for ASD-matrixed and HR Center employee. The Directorate's ESH Coordinator and the EHS Liaison do not routinely participate in the host's self-assessment activities. A walk through of 63% of all space occupied by matrixed employees occurred as part of this IFA process. (See attached Appendix listing locations and appraisal dates of matrixed staff). The responsible line manager for supervising matrixed staff from the Directorate's organizational units is:

Directorate Organizational Unit	Line Manager	Locations
Human Resources Center – General Sciences & Lab Directorate	Colette Gooch	50-4037C, 4037D, 4037K, 4037J, & 4037G
Human Resources Center – Life Sciences, Physical Biosciences & Genomics	Nancy Talcott	941-0106, 0111, 0112, 0115, 0113, 0114, 0116 PGF/100-0107
Human Resources Center – ALS, EH&S, EETD, & Earth Sciences	Sherri Harding	90-1121A, 1121B, 1125, 1127, 1131
Human Resources Center – Chemical Sciences & Materials Sciences	Ann Lawhead	66-0223, 0242 & 0243
Human Resources Center – Computing Sciences	Chris Diesch	50B-3217, 3218, 4215 & 4236
Human Resources Center – OPS, ASD, CFO, HR, Engineering & Facilities	Karen Ramorino	937-0506 & 0508, 46A-1120 & 1132, 46-204, 69-0227 & 0229
Administrative Services Department – Physical Biosciences	Mary DiFranco	1, 3, 74, 84, 100, 400, 941
Administrative Services Department – Computing Sciences	Cheri Lawrence	50-Complex, 51, 937 & Oakland Center
Administrative Services Department – General Sciences	John Freeman	50 Complex, 71, & 88
Administrative Services Department – Energy Sciences	Nancy Padgett	90-Complex, 70Am 62 & 66
Administrative Services Department – Environment, Health & Safety	Carla Garbis	90-Complex, 26, 48, 51, 75B, & 85B

Another justification and rationale to focus the IFA field walk arounds that centered on matrixed employee work areas was supported by the review of employee work-related injuries and illnesses. Results from the analysis of worker injuries and illnesses occurring from July 1998 through June 2001 within the Directorate reflect the following distribution:

Directorate's Organizational Units	7/01/1998 – 6/30/1999	7/01/1999 – 6/30/2000	7/01/2000 – 6/30/2001
Directorate:			
First Aid Cases	3 (5.3%)	2 (3.4%)	4 (9.3%)
Recordable Cases	0	1 (7.1%)	1 (7.7%)
Financial Services:			
First Aid Cases	0	0	7 (16.3%)
Recordable Cases	0	0	5 (38.5%)
Human Resources:			
First Aid Cases	2 (3.5%)	0	1 (2.3%)
Recordable Cases	3 (21.4%)	0	0
Operations:			
First Aid Cases	2 (3.5%)	0	0
Recordable Cases	0	0	0
Administrative Services:			
First Aid Cases	50 (87.7%)	57 (96.6%)	31 (72.1%)
Recordable Cases	11 (78.6%)	13 (92.9%)	7 (53.8%)
Totals:			
First Aid Cases	57	59	43
Recordable Cases	14	14	13
Combined Cases	71	73	56

The bulk (> 70%) of all Supervisor Accident Analysis Reports (SAARs) generated from employee visits to Health Services, whether first aid or recordable cases, were generated from employees working in ASD. Most cases occurred to matrixed employees, which is the nature of the work assignments for ASD employees.

There are some positive trends worth noting that has occurred over the past three years: although the number of recordable cases remained constant within the Directorate, ASD's contribution is declining. There also has been a significant downward trend in the number of first aid cases, in addition to the severity of the recordable cases. The numbers of accidents that have resulted in lost workday cases (and resultant number of lost work days) and the number of accidents involving solely work restrictions or modified duty (and days on restricted/modified duty) have diminished.

Performance Period	# Lost Workday Cases	# Lost Work Days	# Modified Duty/Restricted Work Only Cases	# Modified Duty/Restricted Work Days
7/1/98 – 6/30/99	9	317	0	81
7/1/99 –6/30/00	3	15	1	72
7/1/00 – 6/30/01	0	0	2	9

3.0 IFA Results and Recommendations

Noteworthy practices/initiatives, findings, recommended corrective actions resulting from site visits are summarized below and itemized in Appendix A. In general, spaces were well maintained, indicating strong commitment to ES&H by management and staff, as well as the effectiveness of the Directorate's self-assessment program. The at-a-glance performance ratings also support this conclusion. The only variability occurred in the area of occupational work injuries and illnesses, where there has been an uptick in the number of recordable cases.

Noteworthy Practices/Initiatives

- ❑ Top management commitment is visible and communicated and constructive progress is being made to integrate safety into work activities in a comprehensive manner.
- ❑ Annual Self-Assessment program has been consistently meeting virtually all performance expectations.
- ❑ Resources have been committed to support the ESH function by hiring a full-time safety coordinator, as well as equipping offices with ergonomic furniture and accessories.

- ❑ Management reviews ISM Plan annually, and an effort was undertaken that resulted in the development of a tailored ASD safety plan (largest unit in the Directorate).
- ❑ Triennial (Directorate/Ops) to biennial (ASD) cycle has been established for completing ergonomic evaluations for all employees.
- ❑ Customized training initiatives were developed (ASD Tutorials) to enhance office safety and ergonomics awareness.
- ❑ The host divisions/departments are conscientious about the safety of matrixed employees occupying and working within their assigned office spaces. Matrixed employees' workspaces are inspected annually through their respective Self-Assessment programs; workplace hazards and any safety issues are typically handled in a timely manner. Safety efforts by the host organizations to provide a safe physical working environment for the Directorate's matrixed employees have been effective.
- ❑ Line managers are responsive to employee safety needs by equipping offices for safety and proper ergonomics.
- ❑ Effectively managing recordable cases: none of them resulting in days away from work or restricted/modified duty.
- ❑ ASD efforts in developing safety plan, safety assurance letter from line managers, ASD tutorials.
- ❑ Setting up an accident review board to examine ASD injuries and illnesses on a quarterly basis will help open the dialogue between management, line supervisors and employees.
- ❑ ASD reduction in first aid (down 45.6% from 2000) and DOE Recordables (down 46.1%) cases.
- ❑ Although there has been an uptick in the frequency of recordable employee injuries and illnesses, there have not been any cases resulting in lost time or restricted/modified work.
- ❑ Financial Services Department management has recognized the need to address the sudden uptick in first aid and recordable injuries/illnesses and has taken the initiative to consult with the EH&S Division for strategies to manage and drive down this sudden caseload.

Recommendations for Continuous Improvement

- ❑ Financial Services Department's (FSD) sudden surge in first aid and recordable cases needs to be examined and accident prevention strategies identified and implemented. A meeting was held between EH&S Liaison, ASD Safety Coordinator, FSD senior managers and FSD safety representatives on August 6, 2001 to discuss strategies to address worker safety and injury/illness trends. Three immediate action items are being implemented:

- An e-mail to all FSD employees from the CFO to reinforce the need to work safely, communicate any safety/ergonomic concerns and discomfort to supervisors in a timely manner, and solicit volunteers to become trained ergonomic evaluators.
- Conduct an Ergonomics Awareness training session for FSD managers and supervisors, with eventual rollout refresher training to all staff.
- Offer follow-up ergonomic evaluations for interested/concerned employees.
- Need to implement a centralized system to electronically input and monitor self-assessment findings that require corrective actions. The current practice to have hardcopies kept by safety representatives and/or Safety Coordinator makes data review, analysis and tracking manually intensive.
- An institutional policy on handling safety of matrixed employees should be considered between “Host Division” and “Home Organizations” to clarify roles and responsibilities for assuring work place safety of matrixed employees.
- At risk ergonomics behaviors continue to be observed even after training and furniture/accessories are acquired and installed. Supervisors need to remind and reinforce safe ergonomic practices.
- Manager and supervisor training in ergonomics awareness and EH&S essentials (SAAR investigations, Office Safety, ISM Roles and Responsibilities, etc.) would help strengthen understanding and implementation of safety.
- Launching a pilot “Office Behavior-based Accident Prevention (OBAP) program and wellness initiatives would position its safety in a prevention mode. Such proactive efforts would help reinforce consistent safe work practices, especially office ergonomics, and improve the quality of work life.
- An ASD policy should be considered with regards to portability of ergonomic chairs and other accessories for flywheel personnel. Given the nature of the work, once these employees complete their short-term assignments they are physically moved to another office location for their next job. There is no guarantee the next office will be ergonomically equipped for them.
- The Safety Coordinator needs to populate the HEAR database to maintain a current inventory of hazards.

c: Sally Benson
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APPENDIX

Field Appraisal Schedule and Venues - 2001

[illegible]

08/07/01 08/07/01 08/07/01 08/07/01 08/07/01	71-0221 71-0227 71-0268 71F-0101 71F-0103		cabinet, creating a potential seismic hazard. Relocate binders and use “quake grip” (Velcro) to secure potted plants.
08/06/01 08/06/01 08/06/01 08/06/01	ASD Matrixed – Nuclear Sciences 50-4037F 50-4051 50A-2134A 71-0270 88-0105	John Freeman Gordon Wozniak Kathie Hardy Joy Kono	<input type="checkbox"/> All offices and cubicles are ergonomically equipped <input type="checkbox"/> 50-4051: replace dilapidated chair mat to enable employee to smoothly roll between computer and desk surfaces.
08/07/01 08/07/01 08/07/01	ASD Matrixed – General Sciences Overhead Personnel 50-4037E 50-4059 50-5006 50-6026 50B-2215K 71-0270 71K-0102 71K-0103	John Freeman Kathie Hardy Joy Kono	<input type="checkbox"/> All offices and cubicles are ergonomically equipped <input type="checkbox"/> 71-270: dangling light diffuser observed over the employee’s work desk (corrected on-the-spot by remounting onto frame).
08/08/01 08/08/01 08/08/01 08/08/01 08/08/01 08/08/01 08/08/01 08/08/01	ASD Matrixed – Physics 50-4050B 50-5006A 50-6000B 50-6026 50-6060 50-6062 50A-5104 50A-5104A	John Freeman Kathie Hardy	<input type="checkbox"/> All offices and cubicles are ergonomically equipped. <input type="checkbox"/> Adequate storage space a challenge for many work areas, causing placement of materials under the work desk. This reduces potential for “duck and cover” protection. Housekeeping needs a closer look. Examples found in 50-4050B and 50-5006A & 50-6026. <input type="checkbox"/> 50-4037J: secure freestanding fan on top of storage cabinet by using “Quake Grip” (Velcro) strips. <input type="checkbox"/> 50-6026: Diffuser cover over fluorescent light fixture is missing and needs to be replaced.

07/13/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01 08/10/01	ASD Matrixed – ALS 2-0400 6-2100 6-2145 6-2212A 6-2212D 6-2212E 6-2212G 6-2212H 80-0224 80-0237 80-0241	Nancy Padgett Barbara Phillips Georgeanna Perdue	<ul style="list-style-type: none"> ❑ All offices and cubicles are ergonomically equipped. Excellent example of workstation adjustability is found in 6-2212C. ❑ 6-2145: Employees are occupying an office suite that was converted from a Supply Room 3 years ago. New Steelcase furniture has been installed and occupancy will grow to 4 employees. An indoor air quality (IAQ) issue exists that Jack Salazar identified as inadequate air changes. PBD management is working with Facilities to fund project for improving the ventilation supply (HVAC) system to the room. Need to monitor to assure timely closure of IAQ issue.
08/10/01 08/10/01 08/10/01 08/10/01 08/10/01	ASD Matrixed – Chemical Sciences 70A-1150 70A-3307B 70A-3307C 70A-3307D 70A-3307E	Nancy Padgett Nahid Mahani Angela Gill	<ul style="list-style-type: none"> ❑ 70A-3307 Suite: seismically secure freestanding lateral file cabinet adjacent to 3307D. Install seismic restraint ("quake grip/Velcro strips) to base of fax machine and color printer between 3307C & 3307D. ❑ Install seismic lip across top surface of the lateral file cabinet in 3307C and overhead storage cabinet in 3307D. ❑ 70A-3307E: ergonomic mismatch between employee and workstation. Need to lower work surface to a compatible working height. Chair mat is needed to facilitate movement between PC and work desk areas. ❑ 70A-3307C: seismically restrain ("quake grip/Velcro strips) potted plant stored overhead on top of storage cabinet.

08/07/01	19A-0363		
08/07/01	62-0241		<ul style="list-style-type: none"> ❑ 66-223: a shelf that is installed to right of entrance to the office is a potential impact hazard to the head and should either be padded or relocated.
08/07/01	66-0206		
08/07/01	66-0236		
08/07/01	66-0237		
08/07/01	66-0239		
08/07/01	66-0240		
08/07/01	66-0245		
08/07/01	66-0248		
08/07/01	66-0249		
08/07/01	66-0250		
08/07/01	66-0250D		
08/07/01	66-0426		<p>Employee may need to replace her existing ergonomic chair with one that has less seat pan depth (employee was observed sitting on front edge without lumbar support).</p>
	66-0442		<ul style="list-style-type: none"> ❑ 66-240: an employee is experiencing some musculoskeletal discomfort, which can be mitigated by lowering work surface to a more compatible working height.
	72-0131		<ul style="list-style-type: none"> ❑ 66-247: dilapidated and unsafe electrical extension cord (connected to multiple plug outlet) in the Supply Room was in unsafe condition and was removed, rendered nonfunctional and discarded. There is also an improper two-wire (non-grounded) extension cord was found in use (daisy chained connection between hand-held shop vac and multiple plug outlet strip) and this was removed from service by the Electrical Safety Engineer.
			<ul style="list-style-type: none"> ❑ 66-247 (Maria's Cubicle): a dilapidated chair mat needs to be replaced – cracked and splintered condition.
			<ul style="list-style-type: none"> ❑ 66-247: a freestanding mail distribution cabinet located along an egress path (outside 248 & 249) should be seismically braced.
			<ul style="list-style-type: none"> ❑ 66-0238: wrist rest should be provided for employee's keyboard to eliminate wrists and palms resting on

08/09/01 08/09/01 08/09/01 08/09/01 08/09/01 08/09/01 08/09/01	HR Center – LSD/PBD/GD 941-0106 941-0111 941-0112 941-0113 941-0114 941-0115 941-0116 100-0107	Nancy Talcott	<input type="checkbox"/> All offices and cubicles are ergonomically equipped.
08/10/01 08/10/01 08/10/01 08/10/01	HR Center – ALS/EHS/ESD/EETD 90-1121A 90-1121B 90-1125 90-1127	Sherri Harding	<input type="checkbox"/> All offices and cubicles are ergonomically equipped.
08/06/01 08/06/01 08/06/01 08/06/01	HR Center – Computing Sciences 50B-3217 50B-3218 50B-4215 50B-4236	Chris Diesch	<input type="checkbox"/> All offices and cubicles are ergonomically equipped.
07/05/01 07/05/01 07/05/01 07/05/01 07/05/01	HR Center – Gen Sci/Lab Directorate 50-4037C 50-4037D 50-4037G 50-4037J 50-4037K	Colette Gooch	<input type="checkbox"/> All offices and cubicles are ergonomically equipped.
08/07/01 08/07/01 08/07/01	HR Center – CSD & MSD 66-0223 66-0242 66-0243	Ann Lawhead	<input type="checkbox"/> 66-223: Consider more compatible ergonomic chair; seat pan depth on current chair is deep, causing employee to sit at front edge. Protect wall shelf from being a bump hazard to the head.
06/27/01 06/27/01 08/08/01 08/08/01 08/08/01	HR Center –Resources/OPS 937-0506 937-0508 46A-1120 46A-1132 46-0204	Karen Ramorino	<input type="checkbox"/> All offices and cubicles are ergonomically equipped.

08/07/01	69-0227		<input type="checkbox"/> 69-229: Electrical panel is blocked by desk and does not have proper access clearance. Clearance created (8/10/01).
08/07/01	69-0229		